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COMMITTEE OF EXPERTS ON THE TRANSPORT OF DANGEROUS GOODS

GROUP OF EXPERTS ON EXPLOSIVES

REPORT OF THE GROUP OF EXPERTS ON EXPLOSIVES ON ITS TWENTIETH SESSION

(4-8 August 1980)

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REPORT

1. The Group of Experts on Explosives held its twentieth session at Geneva from 4 to 8 August 1980. Experts from the following countries participated in its work: Canada; France; Germany, Federal Republic of; Italy; Japan; United Kingdom; United States of America, Union of Soviet Socialist Republics. On the invitation of the Group of Experts on Explosives, experts from the Netherlands also participated as observers.

ADOPTION OF THE AGENDA

2. The Group of Experts adopted the provisional agenda prepared by the secretariat (ST/SG/AC.10/C.1/R.53).

ELECTION OF CHAIRMAN

3. On the proposal of the expert from the United States of America, supported by the experts from Canada and France, Mr. R.R. Watson (United Kingdom) was unanimously re-elected Chairman.

GENERAL MATTERS

4. The report of the informal meeting of the Group of Experts held in Washington from 9-17 April 1980 (ST/SG/AC.10/C.1/R.52) was presented by the Chairman to the Group of Experts. After the Group had clarified certain questions raised by the experts from Japan and the Union of Soviet Socialist Republics, the Group of Experts approved the report.

5. The Group of Experts were also informed that the annexes to this report had been incorporated in the revised version of chapter 4 (ST/SG/AC.10/C.1/R.57).

6. Two small working groups were set up, one on testing led by Mr. Steidinger (Federal Republic of Germany) and the other on editorial matters (chapter 4) led by Mr. Andronov (Union of Soviet Socialist Republics).

7. The working group on testing had before it documents ST/SG/AC.10/C.1/R.55, -/R.56, -/R.66, -/R.68, -/R.69 and -/R.71 and the informal papers from the United States of America and the Netherlands circulated during the session; and the working group on editorial matters considered documents ST/SG/AC.10/C.1/R.52, -/R.57, -/R.59 and -/R.60 and the informal paper from the Union of Soviet Socialist Republics circulated during the session which proposed the rearrangement of paragraphs in document ST/SG/AC.10/C.1/R.57.

8. The Chairman, speaking on behalf of the Inter-Governmental Maritime Consultative Organization (IMCO) asked that the Group of Experts should clarify the term "sheets, plastics" used in certain packing methods. He further proposed that the Group should also consider in its discussion a product called Carbadox (Metadox).

9. In reply to a query regarding chapter 10 (Packing of Explosives), the expert from Canada stated that the work had been completed on the basis of the annex adopted by the Committee (ST/SG/AC.10/4, annex 9) and subject to correction of any further errors brought to their attention, the text was ready to go to the printer.

10. It was also confirmed that the note at the beginning of chapter 10 of the United Nations Recommendations had been omitted inadvertently and would be re-inserted in the final text.

REVISION OF CHAPTER 13 WITH REFERENCE TO CLASS 1

11. A member of the secretariat introduced document ST/SG/AC.10/C.1/R.54 (Recommendations on consignment procedures (ST/SG/AC.10/4, annex 12)) and the Group of Experts studied this chapter, paragraph by paragraph.

12. With regard to the section on placarding the Group of Experts adopted various changes which are shown in annex 1 to this report.

13. The reason for these changes was that the emergency services would look to the classification code as required by paragraph 13.9 and not to the serial number. The Chairman stated that public display of the serial number on placards (see annex 1) might prejudice security by making it easy for criminals to identify particular kinds of explosive products.

14. The Group of Experts agreed on the necessity to show the net weight of the hazardous content also in the transport documents if so required and where appropriate.

15. The expert from the United Kingdom raised two questions in connexion with the revised chapter 13. First, how should unit loads of goods of Class 1 be labelled and secondly, what compatibility group letter should be shown on a placard when the container had a load of mixed compatibility groups? In practice many nations permitted mixing of compatibility groups to some extent so this was a real problem. The Group of Experts considered that those questions required further consideration at a future session.

REVISION OF CHAPTER 4

16. The Group of Experts dealt with documents ST/SG/AC.10/C.1/R.52, -/R.57, -/R.59 and -/R.60. The Group recommended that chapter 4 and the descriptions in chapter 2 and in the Index of the UN Recommendations be amended as shown in annex 2 to this report.

17. The Group of Experts then examined, paragraph by paragraph, a consolidated document prepared during the session by the working group on editorial matters. The document was approved subject to the changes shown in annex 2 to this report and a revised version of chapter 4 will be submitted to the eleventh session of the Committee in December.

18. The Group of Experts urged that should the Committee adopt this revision for chapter 4, every endeavour be made to include it in the new edition of the UN Recommendations.

ADDITIONS TO THE ENTRIES AND PACKING SHEETS OF CLASS 1

19. For the consideration of this item the Group of Experts had before it documents ST/SG/AC.10/C.1/R.61, -/R.62, -/R.63, -/R.65 and -/R.70. The Group agreed to list new entries for squibs and projectiles and the details for those entries as adopted by the Group are shown in annex 3 to this report.

20. With regard to the classification of alcoholic solutions of nitroglycerin, the Group of Experts was informed by the expert from the Federal Republic of Germany of certain tests concluded with this substance and the Group finally agreed that the existing classification for UN No. 0144 be left as it is. The Group of Experts had also some discussion on special provision 25 and agreed to reconsider this subject at a later session.

21. With regard to classification of fireworks the Group of Experts had a preliminary discussion and some experts felt that this description needed clarification. The term "fireworks" was used differently in different countries which would suggest the desirability of introducing new entries for "technical pyrotechnic articles" and so restrict "fireworks" to items designed for entertainment. The expert from the Federal Republic of Germany agreed to submit a paper for the next session on the subject.

22. The Group of Experts continued its discussion concerning the classification of "water-wetted explosives" (ST/SG/AC.10/C.1/R.63) into a new division 1.6. The views of the Group of Experts were divided and it was finally agreed to resume consideration of the subject at the next session.

23. The expert from the United Kingdom introduced document ST/AG/AC.10/C.1/R.64 reviewing the concept underlying compatibility groups in class 1. He stated that in particular for sea transport, problems existed with regard to the stowage of goods with different compatibility groups in one hold.

24. The Group of Experts had a detailed discussion in which all experts participated and explained the system used in their respective countries; in particular with regard to emergency procedure.

25. Finally, the Group of Experts agreed that this subject should be discussed in detail and invited the Committee to include the subject in the future programme of work of the Group of Experts.

26. Following a question submitted by IMCO the Group of Experts discussed the term "Sheets" used in chapter 10 for the packing of explosives and it felt that sheets could be assumed to be some form of a lining.

27. The Group of Experts approved the work carried out by the small groups on packing method E 22 (a) and on the index as shown in annexes 4 and 5 to this report.

COMPLETION OF SYSTEM OF TEST PROCEDURES FOR DETERMINING THE ASSIGNMENT OF SUBSTANCES AND ARTICLES TO CLASS 1

28. The small working group on testing discussed the documents mentioned in paragraph 7 above.

29. The experts reconsidered the flow charts, test methods, test criteria and reference substances for test series 1, 2 and 3.

30. Since no formal agreement on those topics was reached, the working group was of the opinion that more test results were necessary for comparing the different test methods. Therefore the Group of Experts invited all delegations to submit test results and conclusions for further discussion at the next session of the Group of Experts.

31. Documents dealing with specific questions in test series 6 (ST/SG/AC.10/C.1/R.55, R.56, R.66 and the informal United States paper) were briefly discussed.

32. The small group felt that these documents highlighted the different problems regarding clear definitions for testing methods, test instrumentation and test criteria.

33. It was the opinion of the small group that in chapter 4 of the Recommendations a list of competent national authorities might be incorporated, which could advise where details of classification testing could be obtained.

34. The small group also felt that it was necessary to publish preferably as an appendix to the UN recommendations all the details of test methods, test instrumentation reference substances and interpretation of test results.

35. The Group of Experts gave preliminary consideration to this item and agreed to resume discussion on it at its next session. Experts were invited to submit further papers on the subject.

FORMULATION OF PROVISIONS FOR THE LOADING OF INTERMODAL CONTAINERS WITH SUBSTANCES AND ARTICLES OF CLASS 1, AND OF PROVISIONS GOVERNING THE CARRIAGE OF SUCH CONTAINERS

36. The expert from the United Kingdom explained a system developed in his country for the loading and carriage of freight containers (ST/SG/AC.10/C.1/R.67) containing explosives. The Group of Experts noted this information with interest and agreed to resume discussion of the subject at its next session.

37. The expert from the United States expressed his doubts as to whether the scheme proposed in document ST/SG/AC.10/C.1/R.67 could be implemented practically. He noted that by the very nature of containerized transport, it would be virtually impossible to maintain the rigid controls over a particular population of freight containers as required under Regime "B" and that Regime "D" (the only alternative to Regime "B" for high lift applications) was in contravention with the spirit, and perhaps the letter of the CSC.

38. He further noted that through the application of the provisions in document ST/SG/AC.10/C.1/R.57, paragraph 4.18, regarding the pre-load inspection of all freight containers destined to carry goods of Class 1, hundreds of containerized shipments of explosives had been transported without incident.

39. The expert from the Union of Soviet Socialist Republics underlined his interest in the United Kingdom proposal and expressed the opinion that the matter should be discussed at a future session.

ANY OTHER BUSINESS

CARBADOX

40. The expert from the United Kingdom informed the Group of Experts that his preliminary assessment of a substance called CARBADOX, with a view to submitting a proposal for its acceptance into Class 1 or Class 4 following the practice in the International Air Transport Association (IATA), had shown that there could be a serious conflict between the Group's testing scheme and a scheme being developed by the Organisation for Economic Co-operation and Development (OECD) which was also likely to be adopted in support of the Directive of the Council of the European Communities dated 19 September 1979 (79/831/EEC).

41. A substance which does not explode (Test Series 1 and 2) may nevertheless be deemed to be explosive and dangerous, in terms of the Directive, if it is more sensitive to friction (Test Series 4) than dinitrobenzene.

42. Attention was drawn to earlier discussion of the need to liaise with the OECD/IGUS */ (ST/SG/AC.10/C.1/R.52, paragraph 18). It was noted that most of the countries participating in the Group of Experts also participated in OECD/IGUS and some experts were members of both.

43. The Group of Experts agreed to try through their national representatives at OECD and ECE meetings to bring their testing schemes into line with those now recommended by the UN Recommendations.

44. The expert from the Union of Soviet Socialist Republics informed the Group of Experts that he had submitted for the Committee's eleventh session in December a proposal to include an updated list of substances and articles in four languages in the UN Recommendations. This paper (in English, French, Spanish and Russian) listed the entries of chapter 2 of the Recommendations in the sequence of the UN serial numbers.

45. The Group of Experts was invited by the expert from the Union of Soviet Socialist Republics to discuss this matter in principle but it was unable to take a clear position on the matter. Some experts favoured the proposal but felt that the increased number of pages would make the Recommendations too cumbersome. However, the Group of Experts agreed that the USSR contribution might be useful as a reference document.

46. The expert from Canada volunteered to undertake editing of the glossary of chapter 4 by correspondence to ensure technical accuracy and continuity of both the English and French texts. The Group of Experts welcomed this proposal. Experts from France, Italy, the United Kingdom and the Union of Soviet Socialist Republics expressed their willingness to participate in that work.

FUTURE WORK

47. The Group of Experts took note of the Economic and Social Council's resolution 1979/69 concerning the preparation and circulation of documents. The Group was also informed that its next session had been tentatively scheduled to take place from 3-7 August 1981.

48. At its nineteenth session (ST/SG/AC.10/C.1/3, paragraph 19) the Group of Experts had specified a number of matters which required further consideration so as to advance the work on test methods for explosives. Work on the subjects listed in paragraphs 19 (a) and 19 (b) had now been completed and the results reproduced in document ST/SG/AC.10/C.1/R.57.

49. The work mentioned under paragraph 19 (c) of that report still remains to be done and the Group of Experts proposed the following work programme:

(a) collection and distribution of reference substances (commercially available), specified in ST/SG/AC.10/C.1/R.52 for comparative testing;

(b) specification of details of tests mentioned in Figure 4.6 of document ST/SG/AC.10/C.1/R.57, and if possible, results to be furnished;

(c) proposals for test criteria;

(d) study of the criteria for tests listed in test series 6 of Figure 4.6 of document ST/SG/AC.10/C.1/R.57, i.e. those which determine the hazard classification.

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*/ IGUS = International Group of Experts on the Explosion Risks of Unstable Substances.

50. It was suggested that an informal group on testing should hold an inter-sessional meeting, following recent practice, to expedite preparation of papers for the Group's twenty-first session.

ADOPTION OF THE REPORT

51. The Group of Experts adopted the report of its twentieth session together with its annexes.

Annex 1

Chapter 13 - RECOMMENDATIONS ON CONSIGNMENT PROCEDURES

Amendments adopted by the Group of Experts
(ST/SG/AC.10/C.1/R.54)

Paragraphs 13.6 and 13.7 should be interchanged and re-numbered accordingly.

Paragraph 13.14, Specimen labels, Division 1.4:

Instead of the words in brackets "(except safety explosives) */" read "(except compatibility group S */)".

Paragraph 13.15(c)

Add "or article" after the word "substance".

Paragraph 13.24(c)

Amend to read "display the number of the class or division (and for goods of Class 1, the compatibility group) of the dangerous goods in question in the manner prescribed in paragraph 13.9 for the corresponding label, in digits not less than 25 mm high".

Paragraph 13.25

The introductory phrase should read:

"Except for goods of Class 1, consignments of:"

Figure 13.2

The heading should read "DISPLAY OF SERIAL NUMBERS" instead of "PLACARDS".

In the note */ delete the words "and where appropriate, the compatibility group".

Paragraph 13.9

After second sentence amend the text to read: "The labels are divided into two equal parts. With the exception of Divisions 1.4 and 1.5, the upper part of the labels is reserved for the pictorial symbol and the lower part for texts and the class or division number. Except for Divisions 1.4 and 1.5, labels for Class 1 show in the lower part the division number and compatibility group letter for the substance or article. Labels for Divisions 1.4 and 1.5 show in the upper part the division number and in the lower part the compatibility group letter and in the lower corner the class number. For Division 1.4, Compatibility Group S, no label is required. In the case of labels for Class 5, the division number of the substance should be shown in the bottom corner of the label. For all other labels, the class number should be shown in the bottom corner of the labels. A specimen of each label is given in paragraph 13.14."

Paragraph 13.10 (new) (Text of former 13.12)

Paragraph 13.11 (new) (Text of former 13.10)

Paragraph 13.12 (new) (Text of former 13.10.1)

Paragraph 13.15(c) Add "or article" to this sentence.

Paragraph 13.15(d) After the word "description" add in brackets "(by volume, weight, or net explosive content, as appropriate)."

Appendix (to chapter 13) page 12 Proper shipping Name:

Add to end of second paragraph: "Commercial or military names for goods of Class 1 which contain the proper shipping name supplemented by additional descriptive text may be used".

Appendix page 13 At the top of page 13 insert "or generic" immediately after "n.o.s" where it first appears and "generic" after "n.o.s" where it next appears.

Add "Samples, explosive UN 0190" to the list of entries requiring technical name.

Amend the second sentence following the list to read "Trade names should not be used for this purpose".

Insert "or generic" after "n.o.s." in the third sentence of the text following the list.

Annex 2

REVISION OF CHAPTER 4
(ST/SG/AC.10/C.1/R.57)

Document ST/SG/AC.10/C.1/R.57	New paragraph numbering	Revisions
GENERAL NOTES	4.1	to read "General"
4.1	4.1.1	to read "Class 1 is a restricted class, that is to say, in general, only those explosive substances and articles which are listed in chapter 2 should be accepted for transport".
4.2	4.1.2	
4.3	4.1.6	
4.4	4.1.4	
4.5	4.1.8	to read: "Goods of class 1 are assigned to one of five divisions, depending on the type of hazard they present (see chapter 1) and to one or other of 12 compatibility groups which identify the kinds of explosive substances and articles which are deemed to be compatible."
4.6	4.1.9	change "(see 9.8)" to "(see chapter 9, paragraph 9.8)"
4.7	4.1.5	change "in 4.65" to "in paragraph 4.8"
4.8	4.1.3	
4.9	4.1.7	
4.10	-	included in new 4.1.8
4.11	-	included in new 4.1.8
Figure 4.1	Table 4.1	insert after paragraph 4.1.10
Figure 4.2	Table 4.2	insert after table 4.1

4.12	4.1.10	change "Figures 4.1 and 4.2" to "Tables 4.1 and 4.2" change "into comparability" to "into compatibility" (ENGLISH ONLY)
Separation, etc.	4.6	
4.13	4.6.1	
4.14	4.6.2	change "figure 4.2" to "Table 4.2"
4.15	4.6.3	
4.16	4.6.4	
4.17	4.6.5	
Carriage, etc.	4.7	
4.18	4.7.1	
4.19	4.7.2	change "paragraph 4.18" to "paragraph 4.7.1"
Classification, etc.	4.2	
4.20	4.2.1	change "Figure 4.3" to "Figure 4.1"; "Figure 4.4" to "Figure 4.2" and "Figure 4.5" to "Figure 4.3"
Figure 4.3	Figure 4.1	insert after table 4.2
Figure 4.4	Figure 4.2	insert after "Figure 4.1"
Figure 4.5 (page 11)	Figure 4.3	insert after "Figure 4.2" and change box 35 to read "blast or projection", insert a new box 39 to read as follows: "Can the article nevertheless be excluded by definition (see chapter 1, para. 1.11(b))".
Figure 4.6	Table 4.3	insert after "Figure 4.3" in table 4.3 - Series 6, fourth column, change: "paragraph 4.43" to "paragraph 4.5.8 - 4.5.12" "paragraph 4.48" to "paragraph 4.5.13 - 4.5.16" "paragraph 4.52" to "paragraph 4.5.17 - 4.5.20"

4.21	4.2.2	change "Figure 4.6" to "table 4.3"
4.22	4.2.3	change "Figure 4.6" to read "table 4.3" fourth sentence, delete "sometimes" (ENGLISH ONLY) fifth sentence, change "Sometimes" to "In certain cases" (ENGLISH ONLY)
4.23	4.2.4	
4.24	4.2.5	change "(Figure 4.4...)" to "(Figure 4.2...)"
4.25	4.2.6	
Acceptance, etc.	4.3	
4.26	4.3.1	after "Forbidden substances" add "currently under development" add last sentence from paragraph 4.2.2 as second last sentence and change "(paragraph 1.11(c))" to "(Chapter 1, paragraph 1.11(c))"
4.27	4.3.2	change "(Figure 4.4...)" to "(Figure 4.2...)" change "(paragraph 1.11)" to "(Chapter 1, paragraph 1.11)" change "three types of test." "two types of tests" change "Figure 4.6" to read "table 4.3"
4.28	4.3.3	change "(Figure 4.4...)" to "(Figure 4.2...)"; delete "p-dinitrobenzene in ADR/RID" change "three types of tests" "two types of tests"
4.29	4.3.4	change "(Figure 4.4...)" to "(Figure 4.2...)" (twice)
4.30	4.3.5	change "(Figure 4.4...)" to "(Figure 4.2...)"

Some devices, etc.	4.3.6	
Procedure, etc.	4.4	
4.31	4.4.1	change "Figure 4.5" to "Figure 4.3"
4.32	4.4.2	change "(Figure 4.5...)" to "(Figure 4.3...)" change "three types of tests" to "four types of tests"; and add "Test type 5(d) - A spark test to determine ease of ignition by sparks"
4.33	4.4.3	change "paragraph 4.34" to "paragraph 4.4.4" change "Figure 4.5" to "Figure 4.3" change "in paragraph 1.11" to "in Chapter 1, paragraph 1.11" add at end "Descriptions of the tests are found in paragraph 4.5"
4.34	4.4.4	
4.35	4.4.5	
-	4.5	"TEST SERIES 6 FOR ASSIGNMENT OF THE HAZARD DIVISIONS 1.1, 1.2, 1.3 AND 1.4"
4.36	4.5.1	
4.37	4.5.2	
4.38	4.5.3	
4.39	4.5.4	
4.40	4.5.5	
4.41	4.5.6	
4.42	4.5.7	
4.43	4.5.8	
4.44	4.5.9	
4.45	4.5.10	

4.46	4.5.11	
4.47	4.5.12	
4.48	4.5.13	change "paragraph 4.47" to "paragraph 4.5.12"
4.49	4.5.14	
4.50	4.5.15	
4.51	4.5.16	change "paragraphs 4.47 and 4.48" to "paragraphs 4.5.12 and 4.5.13"
4.52	4.5.17	
4.53	4.5.18	
4.54	4.5.19	
4.55	4.5.20	
4.56	4.5.21	
4.57	4.5.22	
4.58	4.4.6	
4.59	4.4.7	
4.60	4.4.8	
4.61	4.4.9	
4.62	4.4.10	
4.63	4.4.11	delete "in this division" in first line and add "Division 1.4," before "Compatibility Group S"
4.64	4.4.12	change "figure 4.1" to "table 4.1"
4.65	4.8	

and the following amendments are to be made:

Under "Ammunition, illuminating", the phrase "but includes neither cartridges, signal nor flares, surface" should be placed at the margin (ENGLISH ONLY).

Delete "Amorces (caps, toy), etc."

Change "Blasting cap assemblies, etc" to "Blasting cap assemblies (see Detonator assemblies for blasting)"

Change "Blasting caps, etc." to "Blasting caps (see Detonators for blasting)"

Change description for "Boosters" to read "Articles containing a detonating explosive and used to increase the initiating power of detonators or detonating cord."

Insert before "Detonators" - "Detonator assemblies for blasting

These are non-electric detonators assembled with and activated by such means as safety fuses, shock tube or detonating cord. The basic detonators may be of the instantaneous design or may incorporate delay elements or detonating relays."

Change "Detonators for blasting (see Blasting caps)" to "Detonators for blasting

Small metal or plastic tubes containing explosives such as lead azide, PETN, or similar explosives. There are essentially two kinds:

(a) Non-electric detonators which are activated by such means as safety fuse, other igniferous device or flexible detonating cord. These detonators may be constructed to detonate instantaneously, or may contain a delay element.

(b) Electric detonators which are activated by an electric current. These detonators may be constructed to detonate instantaneously, or may contain a delay element."

Delete under "Explosives", the term "Nitrocarbonitrates" and the term "explosive seismic".

Change the description for "Explosives, blasting, type B" to "Blasting explosives which are mixtures of ammonium nitrate or other inorganic nitrates with explosives such as trinitrotoluene, with or without other substances such as wood-meal and aluminium powder; or mixtures of ammonium nitrate or other inorganic nitrates with other combustible substances which contain no explosive ingredients. */ These explosives shall not contain nitroglycerin, similar liquid organic nitrates, or chlorates."

Delete "Explosives, seismic, etc"

Change "Fuse fuze" to "Fuse/fuze"

Add after "Fuse, safety" the entry "Fuze (see Fuse/fuze)"

Delete "High explosives, etc."

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*/ The "explosive ingredients" are "explosive substances" as defined in Chapter 1, paragraph 1.11 .

Delete "Low explosives, etc."

Delete "Nitrocarbonitrates, etc."

Insert "Powder cake: nitrocellulose impregnated with not more than 60 per cent of nitroglycerin or other liquid organic nitrates or mixtures of these."

Change "Primary explosive (see Explosive, initiating)" to "Primary explosive (see Explosives, primary)"

Move "Signals, railway, etc." to after "Signal devices, hand"

Delete present entry "Signals, smoke, with explosive sound unit" and substitute "Signals, smoke, with or without explosive sound unit

These contain pyrotechnic substances which produce coloured smoke signals and in addition may or may not produce audible signals."

Delete present description for "Squibs" and replace by "Squibs: Articles containing small quantities of black powder, pyrotechnic substances or initiating explosives. Squibs are igniferous devices, not detonators. In electric squibs, functioning is accomplished by applying an electric current".

Change "Warheads, rocket" to "Warheads

An article containing secondary detonating explosives, designed to be fitted to a rocket or torpedo. Guided-missile warheads are included in this description. Some warheads are fitted only with a burster or expelling charge."

Annex 3

Chapter 2 - LIST OF DANGEROUS GOODS MOST COMMONLY CARRIED

Amendments adopted by the Group of Experts

1. Addition of new entries

NUMBER	SUBSTANCE or ARTICLE	HAZARDS			PACKING		CONTROL TEMPERATURE (°C)	EMERGENCY TEMPERATURE (°C)
	NAME AND DESCRIPTION	CLASS DIVISION	SUBSIDIARY RISK	SPECIAL PROVISIONS	GROUP	METHOD		
0422	SQUIBS*	1.4 B	+	-	-	E 141		
0423	SQUIBS*	1.4 G	+	-	-	E 141		
0424	PROJECTILES*, inert, with tracer	1.3 G	+	-	-	E 144		
0425	PROJECTILES*, inert, with tracer	1.4 G	+	-	-	E 144		
0426	PROJECTILES*, with burster or expelling charge	1.2 F	+	-	-	E 144		
0427	PROJECTILES*, with burster or expelling charge	1.4 F	+	-	-	E 144		

2. Amend present entries as follows:

UN No	Description
0029	DETONATORS*, NON-ELECTRIC, for blasting
0030	DETONATORS*, ELECTRIC, for blasting
0255	DETONATORS*, ELECTRIC, for blasting
0267	DETONATORS*, NON-ELECTRIC, for blasting
0360	DETONATOR*, ASSEMBLIES, NON-ELECTRIC, for blasting
0361	DETONATOR* ASSEMBLIES, NON-ELECTRIC, for blasting

3. In the Index of the Recommendations amend the alphabetical entry for SQUIBS to read:

"SQUIBS* (including electric squibs and safety squibs)	1.4B 0422
	1.4G 0423
	1.4S 0206"

ANNEX A

Chapter 10 - SPECIAL RECOMMENDATIONS ON PACKING FOR CLASS 1
(ST/SG/AC.10/4/Add.3)

Packing method E 22 (a)

Delete in column 3

"Drums

fibreboard, convolutely wound plies (1G1)

fibreboard, spirally wound plies (1G2)

plywood, removable head (1D2)"

Annex 5

ALPHABETICAL INDEX IN THE UN RECOMMENDATIONS
(ST/SG/AC.10/1/Rev.1)

The following "entry changes" should be made in the Index:

add "Amorces (caps, toy) see	1.1 G	0333
	1.4 G	0336
	1.4 S	0337"
change to read "Blasting cap assemblies, see	1.1 B	0360
	1.4 B	0361"
change to read "Blasting caps, electric, see	1.1 B	0030
	1.4 B	0225"
change to read "Blasting caps, non-electric, see	1.1 B	0029
	1.4 B	0267"
change to read "DETONATOR ASSEMBLIES, non-electric for blasting	1.1 B	0360
	1.4 B	0361"
change to read "DETONATORS, ELECTRIC, for blasting	1.1 B	0030
	1.4 B	0255"
change to read "DETONATORS, NON-ELECTRIC, for blasting	1.1 B	0029
	1.4 B	0267"
add "Explosives, seismic, see	1.1 D	0081
	1.1 D	0082
	1.1 D	0083
	1.5 D	0331"